

In the claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A multiwell plate comprising a plurality of wells wherein at the bottom surface of at least one well of said plurality of wells is a plurality of picowells, wherein said picowells are unitary structures each comprised of a bottom and a side wall integral with said bottom, and the inside surfaces of said picowells include a coating of a material that inhibits or delays adherence of cells in said wells.

2. (Original) The plate of claim 1, having a footprint of a standard multiwell plate.

3. (Original) The plate of claim 1, wherein said plurality of wells comprises $6n$ wells arranged in a $2n \times 3n$ array, where n is an integer greater than 0.

4. (Cancelled)

5. (Original) The plate of claim 3, wherein said plurality of wells is selected from the group consisting of 6, 24, 96, 384 and 1536 wells.

6-10. (Cancelled)

11. (Original) The plate of claim 1, wherein picowells of said plurality of picowells are juxtaposed.

12. (Original) The plate of claim 11, wherein the interwell area between two said picowells is less than about 0.35 the sum of the areas of said two picowells.

13-16. (Cancelled)

17. (Original) The plate of claim 11, wherein a rim of a said picowell is substantially knife-edged.

18. (Original) The plate of claim 1, wherein said plurality of picowells comprises picowells having dimensions of less than about 200 microns.

19-24. (Cancelled)

25. (Currently Amended) The plate of claim ~~1~~ 186, wherein ~~picowells of~~ said plurality of picowells comprise enclosures of dimensions such that substantially an entire cell of a certain size can be held ~~is containable~~ within a said enclosure, each said enclosure having an opening, said opening defined by a first cross section of a size allowing passage of a cell of a certain size.

26-37. (Cancelled)

38. (Original) The plate of claim 1, said plurality of picowells comprising picowells, wherein all picowells of the plate are substantially identical in size.

39. (Original) The plate of claim 1, wherein a first said well includes a first said plurality of picowells and a second said well includes a second said plurality of picowells, wherein said first plurality of picowells and said second plurality of picowells are substantially different.

40-43. (Cancelled)

44. (Original) The plate of claim 1, further comprising at least one distinct well-wall component attached to said bottom surface.

45. (Cancelled)

46. (Currently Amended) The plate of claim 1, wherein said plurality of picowells are un-detachable from said bottom surface.

47. (Original) The plate of claim 1, further comprising at least one distinct picowell-bearing component bearing said plurality of picowells attached to said bottom surface of said one well.

48-50. (Cancelled)

51. (Currently Amended) The plate of claim 1, further comprising at least one distinct picowell-bearing component bearing said plurality of picowells ~~resting~~ within said one well.

52-54. (Cancelled)

55. (Original) The plate of claim 51, wherein said picowell-bearing component comprises a gel.

56-57. (Cancelled)

58. (Original) The device of claim 55, wherein the water content of said gel is greater than about 80% by weight.

59-63. (Cancelled)

64. (Original) The device of claim 55, wherein said gel comprises an active entity.

65-72. (Cancelled)

73. (Original) The plate of claim 1, said plurality of picowells comprising picowells, the bottom of said picowells substantially having an index of refraction similar to that of water.

74. (Original) The plate of claim 73, wherein said index of refraction is less than about 1.4.

75-80. (Cancelled)

81. (Original) The plate of claim 1, further comprising a gel cover covering said plurality of picowells.

82. (Original) The plate of claim 1, wherein said plurality of picowells covers substantially the entire said bottom surface of said well.

83-87. (Cancelled)

88. (Withdrawn) A method of making a multiwell plate of claim 1, comprising:

(a) contacting a precursor material with a template including a negative of features of the plate so as to create said features in said precursor material, said features including said plurality of picowells;

(b) fixing said features in said precursor material so as to fashion an incipient plate; and

(c) processing said incipient plate so as to fashion the plate.

89-92. (Cancelled)

93. (Withdrawn) The method of claim 88, further comprising:

(d) prior to (a), placing said precursor material in a well of a multiwell plate.

94. (Withdrawn) The method of claim 88, further comprising:

(d) subsequent to (b), attaching walls of said plurality of wells to said incipient plate.

95-97. (Cancelled)

98. (Withdrawn) The method of claim 88, wherein said precursor material includes a irreversibly deformable precursor material and said fixing said features comprises separating said template from said precursor material.

99. (Cancelled)

100. (Withdrawn) The method of claim 88, wherein said precursor material comprises an reversibly deformable precursor material.

101-119. (Cancelled)

120. (Withdrawn) A method of making a multiwell plate of claim 1, comprising:

- (a) placing a photoresist material on a precursor plate; and
- (b) fixing a plurality of picowells in said photoresist material.

121-122. (Cancelled)

123. (Withdrawn) The method of claim 120, wherein said precursor plate comprises a multiwell plate.

124-125. (Cancelled)

126. (Withdrawn) A method of making a multiwell plate of claim 1, comprising placing a picowell-bearing component on a precursor plate.

127-134. (Cancelled)

135. (Withdrawn) A device comprising an array of living cells held in a non-fluid matrix, said matrix configured to maintain cell viability.

136. (Withdrawn) The device of claim 135, wherein said living cells are physically held in pockets in said matrix.

137. (Cancelled)

138. (Withdrawn) The device of claim 135, wherein said array is substantially planar having an upper surface and a lower surface.

139-144. (Cancelled)

145. (Withdrawn) The device of claim 135, said matrix comprising a material having an index of refraction substantially similar to that of water.

146. (Withdrawn) The device of claim 145, said matrix comprising a material having an index of refraction less than about 1.4.

147-151. (Cancelled)

152. (Withdrawn) The device of claim 135, said matrix made of a material comprising a gel.

153-156. (Cancelled)

157. (Withdrawn) A method for handling living cells, comprising:
(a) providing an ordered array of living cells immobilized in a non-fluid matrix, said matrix configured to maintain cell viability;
(b) contacting said living cells with a stimulus; and
(c) detecting a response of said cells to said stimulus.

158-168. (Cancelled)

169. (Withdrawn) A method of producing an ordered array of living cells in a non-fluid matrix, comprising:
(a) providing a multiwell plate provided with a plurality of wells, said multiwell plate including a plurality of picowells at the bottom of at least one said well, said plurality of picowells including picowells;
(b) placing a suspension of a plurality of living cells in a gellable fluid in said at least one well;
(c) causing said living cells to settle into said picowells so as to be held in respective picowells; and
(d) gelling said gellable fluid so as to make a gel cover, trapping said living cells between said picowells and said gel cover.

170. (Withdrawn) The method of claim 169, wherein said picowells are made of a material comprising a gel.

171-175. (Cancelled)

176. (Withdrawn) The method of claim 169, wherein (e) prior to (d), ensuring that substantially each picowell holds no more than one living cell.

177-185. (Cancelled)

186. (New) A device for holding living cells, the device comprising:
a plurality of picowells; and
a carrier for said picowells,
the device characterized in that said wells are comprised of integral bottom and side walls, and are open at the tops.

187. (New) The device of claim 186, wherein said carrier is formed substantially of a material having an index of refraction between that of water and about 1.4.

188. (New) The device of claim 186, wherein at least one component is formed of a gel.

189. (New) The device of claim 188, wherein the gel contains water, the water content of said gel being greater than about 80% by weight of said gel.

190. (New) The device of claim 188, wherein said gel includes an active entity.

191. (New) The device of claim 188, wherein said carrier and/or a cover for said surface is formed of said gel.

192. (New) The device of claim 186, wherein a cross-section of said picowells is rectangular, triangular, or circular.

193. (New) The device of claim 186, wherein the inter picowell area between two picowells is less than or equal to about 0.35 of the sum of the areas of the two picowells.

194. (New) The device of claim 186, wherein the bottoms of said picowells are solid.

195. (New) The device of claim 186, wherein rim of a said picowells are substantially knife-edged.

196. (New) The device of claim 186, wherein the dimensions of said picowells are less than about 200 microns.

197. (New, Withdrawn) A method of making the device of claim 186, comprising:

contacting a precursor material with a template to create the features of said plurality of picowells in said precursor material;
fixing said features in said precursor material so as to fashion an incipient plate with integral wells from said precursor material ; and
processing said incipient plate so as to fashion a fully formed picowell-bearing plate.

198. (New, Withdrawn) The method of claim 197, wherein said template contains a negative of said plurality of picowells.

199. (New, Withdrawn) The method of claim 197, wherein said precursor material is plastically deformable and said features are fixed by separating said template from said precursor material.

200. (New, Withdrawn) The method of claim 197, wherein said precursor material is an elastic material.

201. (New, Withdrawn) The method of claim 202, wherein said elastic precursor gelling said gellable fluid.

202. (New, Withdrawn) The method of claim 197, wherein said precursor material is irreversibly deformable and said features are fixed by separating said template from said precursor material.

203. (New, Withdrawn) The method of Claim 197, wherein said template is formed of a photoresist material; and said picowells are fixed in said photoresist material.

204. (New) The device of claim 1, wherein a cross-section of said picowells is rectangular, triangular, or circular.

205. (New) The device of claim 186, wherein the volume of said picowells is in the range of less than about 10^{-12} to less than about 10^{-15} liters.

206. (New) The device of claim 1, wherein the volume of said picowells is in the range of less than about 10^{-12} to less than about 10^{-15} liters.

207. (New) A device according to claim 186, wherein said wells are configured to hold a single cell of a certain type or a predetermined maximum number of cells of said certain type.